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Effects of atomic radiation

Effects of atomic radiation in the Marshall Islands

Report of the Secretary-General

Summary

The present report has been prepared pursuant to paragraph 14 of General Assembly resolution 65/96, in which the Assembly requested the Secretary-General to report to it, within existing resources, at its sixty-sixth session, regarding the effects of atomic radiation in the Marshall Islands. In that connection, the report provides a concise summary of the assessments undertaken on the topic over several decades by the United Nations Scientific Committee on the Effects of Atomic Radiation and others.

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1. On 10 December 2010, the General Assembly adopted resolution 65/96 on the effects of atomic radiation. In operative paragraph 14 of the resolution, the Assembly requested the Secretary-General to report to the General Assembly, within existing resources, at its sixty-sixth session, regarding the effects of atomic radiation in the Marshall Islands, taking into account analysis by recognized experts, including the United Nations Scientific Committee on the Effects of Atomic Radiation, and previously published studies on the topic.

2. The Scientific Committee held its fifty-eighth session in Vienna from 23 to 27 May 2011. At the session, the Scientific Committee took note of the request by the General Assembly and discussed the issue. The Scientific Committee recalled that it had assessed the radiation situation in the Marshall Islands over many decades, and agreed to offer a short summary of those assessments to the Secretary-General for his report to the Assembly. The Scientific Committee also noted that future requests by the Assembly regarding assessments of the radiation situation in the Marshall Islands should be addressed directly to the Committee, which has the competence in such matters.

3. Since its creation in 1955, the Scientific Committee has reported regularly to the General Assembly on the levels and effects of ionizing radiation, including on those associated with nuclear-weapon testing in the Marshall Islands. Annex I to the present report lists the relevant reports of the Scientific Committee and the most important evaluations made by it on this issue.

4. In addition to the ongoing evaluations of the Scientific Committee, in 1994 the Government of the Marshall Islands requested the International Atomic Energy Agency (IAEA) to conduct an independent international review of the radiological conditions at Bikini Atoll, and to consider and recommend strategies for the resettlement of the atoll. IAEA responded by convening an Advisory Group, under the framework of an IAEA technical cooperation project for the Republic of the Marshall Islands, to carry out the requested international review. Scientific representatives of the secretariats of the Scientific Committee and the World Health Organization participated in the Advisory Group. The international review took into account all of the available data from surveys of the Marshall Islands, as well as a large number of other assessments made by scientists from around the world. At the time, the information on the issue available in the open literature was already considerable. Annex II lists some of the key references available.

5. The international review also took into account radiation protection criteria used in the Marshall Islands[1] and the international radiation protection recommendations[2] and radiation safety standards[3] prevailing at the time. The Advisory Group report was

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[1] Bikini Atoll Rehabilitation Committee, *Resettlement of Bikini Atoll: Feasibility and Estimated Cost of Meeting the Federal Radiation Protection Standards*, interim report (23 November 1983) and report No. 1 (15 November 1984).

[2] See *1990 Recommendations of the International Commission on Radiological Protection*, ICRP Publication 60, Annals of the ICRP 21(1-3) (Pergamon Press, Oxford, 1991).

[3] Codex Alimentarius Commission, Codex Alimentarius, General Requirements, section 6.1, "Guideline levels for radionuclides in foods following accidental nuclear contamination" (Rome, Joint Food and Agriculture Organization of the United Nations/World Health Organization Food Standards Programme, 1991); International Atomic Energy Agency, "Guidelines for agricultural countermeasures following an accidental release of radionuclides", a joint undertaking by the International Atomic Energy Agency and the Food and Agriculture Organization of the United Nations, Technical Reports Series No. 363 (Vienna, 1994); Food and Agriculture Organization,

presented to and discussed with the late President of the Marshall Islands, Amata Kabua, who was accompanied by the then Minister of Health and Environment, Thomas Kijiner, during the President's official visit to Tokyo on 14 October 1996. Soon after the meeting, on 17 October 1996, the report was formally submitted by IAEA to the Government of the Marshall Islands in Majuro through the requesting office, the Ministry of Foreign Affairs. The report was also presented to the Bikinian community through the Office of the Local Government of Kili/Bikini/Ejit in Majuro on 18 October 1996. The report was finally officially accepted by the Government of the Marshall Islands through a letter addressed to IAEA from the Ambassador of the Marshall Islands to the United States of America on 18 September 1997. In 1998, IAEA issued a report entitled "Radiological conditions at Bikini Atoll: prospects for resettlement",[4] which covered the international review in greater detail.

6. The information available on the effects of atomic radiation in the Marshall Islands is extensive, and cannot be reviewed comprehensively in the present brief report, given existing resources. However: (a) the Scientific Committee has reported routinely to the General Assembly on the radiation levels and effects in the Marshall Islands; (b) an international assessment of the radiological conditions in Bikini Atoll was performed at the request of the Government of the Marshall Islands; and (c) many recognized experts have published radiological data relating to the Marshall Islands in the peer-reviewed scientific literature.

7. Some of the most significant findings are set out below. The populations of the atolls where nuclear-weapon tests were conducted between 1946 and 1958 were relocated prior to the testing programme. However, one unusual test, the Castle Bravo test at Bikini Atoll in 1954, resulted in significant radiation exposures. Within a few hours of the explosion, fallout exposed people to radiation at life-threatening levels on Rongelap and Ailinginae (atolls 200 km from Bikini) and at lower levels further east. People were evacuated within a few days. Doses to the thyroid from short-lived radioisotopes and gamma radiation were particularly high, especially for children. Subsequently, an elevated incidence of thyroid cancer and other thyroid diseases was linked to high radiation exposures.

8. Residents returning to Utirik Atoll in 1954 and to Rongelap Atoll in 1957 had exposures up to a few times higher than global average background exposure to natural radiation sources (natural background) over the subsequent 20-year period. When people temporarily resettled Bikini Atoll between 1971 and 1978, annual whole-body exposures were similar to natural background exposure. The IAEA Advisory Group recommended in 1997 that people not be permanently resettled on Bikini Atoll under the existing radiological conditions, on the assumption that all of their food would be produced locally. However, the Advisory Group also stated that remedial actions could be taken to allow the permanent resettlement of the atoll. No

International Atomic Energy Agency, International Labour Organization, Organization for Economic Cooperation and Development Nuclear Energy Agency, Pan American Health Organization, World Health Organization, "International basic safety standards for protection against ionizing radiation and for the safety of radiation sources", Safety Series No. 115 (Vienna, 1996); and International Atomic Energy Agency, "Application of radiation protection principles to the clean-up of contaminated areas", interim report for comment (IAEA-TECDOC-987) (Vienna, 1997).

[4] International Atomic Energy Agency, "Radiological conditions at Bikini Atoll: prospects for resettlement," Radiological Assessment Reports Series (STI/PUB/1054) (Vienna, 1998).

further corroboration of the measurements of the radiological conditions at Bikini Atoll and the related assessments was deemed necessary.

9. In letters to the Secretary-General dated 11 February and 26 July 2011, the Permanent Representative of the Marshall Islands to the United Nations addressed the issue of the breadth and depth of the present report, requesting that it cover not only the scientific effects of atomic radiation but a range of matters, including the political history in the Marshall Islands of atomic-weapon testing; the public health aspects of radiation effects; social, cultural and development aspects related to testing, exposure and subsequent events and remediation options; issues relating to the involvement of the United Nations, including the Trusteeship Council, and the role of the international community in addressing subsequent effects; and future challenges and issues relating to such effects. The Secretary-General responded to the Permanent Representative by letter dated 17 August 2011, noting that General Assembly resolution 65/96 specifically defined the scope of the report as the effects of atomic radiation and indicating that many of the matters raised by the Marshall Islands were beyond the limited scientific scope of the effects of atomic radiation. The Secretary-General further indicated that the Organization stood ready to respond to any future instruction from the Assembly.

10. The General Assembly may wish to consider whether additional international efforts are appropriate for consolidating all the relevant available information on the effects of atomic radiation in the Marshall Islands into a final report of scientific findings on this regrettable episode in human history. Should the Assembly wish to pursue that course, the United Nations Scientific Committee on the Effects of Atomic Radiation would be the appropriate international body to entrust with that responsibility.

11. It should be noted that the Secretary-General convened a high-level meeting on nuclear safety and security on 22 September 2011 with a view to building political support and momentum at the highest level for the ongoing and planned efforts of the international community to promote nuclear safety in the wake of the nuclear accident in Fukushima, Japan. In order to facilitate a full assessment by the Scientific Committee of the levels of exposure and radiation risks attributable to the Fukushima accident, the Secretary-General asked that the General Assembly ensure that the Committee had all the resources necessary to accomplish this task.

12. The Secretary-General would like to further reaffirm the objective of General Assembly resolution 64/35 that every effort should be made to end nuclear tests in order to avert devastating and harmful effects on the lives and health of people and the environment and that the end of nuclear tests is one of the key means of achieving the goal of a nuclear-weapon-free world.

Annex I

Reports of the United Nations Scientific Committee on the Effects of Atomic Radiation that address the effects of atomic radiation in the Marshall Islands

Official Records of the General Assembly, Thirteenth Session, Supplement No. 17 (A/3838) (1958), chap. V, para. 25; chap. VII, para. 18; and annex I (A/AC.82/G/R.54 and R.125)

Official Records of the General Assembly, Seventeenth Session, Supplement No. 16 (A/5216) (1962), chap. III, para. 8, and annex D, paras. 43, 44, 204, 206, 314, 526 and 530

Official Records of the General Assembly, Twenty-fourth Session, Supplement No. 13 (A/7613) (1969), annex C, para. 249

Ionizing Radiation: Levels and Effects, vols. I and II (United Nations publication, Sales Nos. E.72.IX.17 and 18) (1972), annex H, paras. 98 and 105

Sources and Effects of Ionizing Radiation (United Nations publication, Sales No. E.77.IX.1) (1977), annex G, paras. 15, 21, 77, 99, 108, 144, 146 and table 10

Ionizing Radiation: Sources and Biological Effects (United Nations publication, Sales No. E.82.IX.8) (1982), annex J, paras. 372 and 407

Sources, Effects and Risks of Ionizing Radiation (United Nations publication, Sales No. E.88.IX.7) (1988), para. 198; annex F, paras. 31, 43, 46, 74, 206, 225, 226, 228, 392 and 440 and table 20; and annex G, paras. 5, 74, 91, 98 and 151

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